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ABSTRACT

Why typical playgrounds are designed the way they are by adults is discussed, including what the ideal outdoor play/learning environment for children is and how the outdoor space should be considered as an extension of the classroom. The paper emphasizes the importance of nature to children, discusses the criteria playground designers should possess, and explains why it is essential for the design process to include input from children, teachers, parents, and maintenance staff. (GR)

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Creating Outdoor Play & Learning Environments

By Randy White and Vicki L. Stoecklin

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It is really unfortunate that children can't design their own outdoor play environments. Research on children's preferences shows that if children had the design skills to do so, their creations would be completely different from the areas called playgrounds that most adults design for them. Children's designed outdoor environments would not only be fully naturalized with plants, trees, flowers, water, dirt, sand, mud, animals and insects, but also would be rich with a wide variety of play opportunities of every imaginable type. If children could design their outdoor play spaces, the spaces would probably be more developmentally appropriate learning environments than any indoor classroom. They would be places where children would want to stay all day.

This article discusses why typical playgrounds are designed the way they are by adults, what the ideal outdoor play/learning environment for children is and how the outdoor space should be considered as an extension of the classroom.

Playground Paradigm Paralysis

We are all creatures of our experience, and our common experiences usually shape the conventional wisdom, or paradigms, by which we operate. When most adults were children, playgrounds were asphalt areas with fixed physical gross motor play equipment such as swings, jungle gyms and slides where they went for recess. Most adults see this as their model for a children's playground.

So when it comes time to plan and design a playground, the paradigm is to search through the catalogues of playground equipment, pick a piece or two that looks good to the adult and place it in an outdoor space which resembles their childhood memories of playgrounds. This is easy and doesn't take a whole lot of effort. Then once or twice a day, teachers let children go outside for a recess from their classroom activities to play on the equipment.

Today, fortunately, most playground equipment is becoming much safer than when adults grew up. National standards encourage the installation of safety fall surfaces and ADA is making the equipment more accessible. However, limiting outdoor playgrounds to gross motor activities and manufactured equipment falls way short of the potential of outdoor areas to be rich play, discovery and learning environments for children. This playground design paradigm paralysis also denies children their birthright to experience the full natural outdoor world including vegetation, animals, insects and natural elements and materials, not just the sun and air that playgrounds offer.

It is a well accepted principal in early childhood education that children learn best through free play and discovery. Children's free play is a complex concept that eludes precise definition, but children's play typically is pleasurable, self-motivated, imaginative, non-goal directed, spontaneous, active, and free of adult-imposed rules[1,2]. Activities quit being play when they are controlled by an outside force, be it adult or machine. Quality play involves the whole person: gross motor, fine motor, senses, emotion, intellect, individual growth and social interaction.[3]

Childhood of Imprisonment

The world once offered thousands of delights of free play to children. Children used to have

EF 005 457

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access to the world at large, whether it was the sidewalks, streets, alleys, vacant lots and parks of the inner city or the fields, forests, streams and yards of suburbia and the rural countryside. Children could play, explore and interact with the natural world and people with little or no restriction or supervision.

The lives of children today are much more structured and supervised, with few opportunities for free play. Their physical boundaries have shrunk.[4] A number of factors have led to this. Parents are afraid for their children's safety when they leave the house alone; many children are no longer free to roam their neighborhoods or even their own yards unless accompanied by adults. Some working families can't supervise their children after school, giving rise to latchkey children who stay indoors or go to supervised after-school activities. Furthermore, children's lives have become structured and scheduled by adults, who hold the mistaken belief that this sport or that lesson will make their children more successful as adults. Children are losing the balance in their lives.

Free play is one of those activities that children have little time for any more. And when children do have free time, it's often spent inside the house in front of the television or computers. For some children, that's because their neighborhood, apartment complex or house has no outdoor play spaces. With budgets for city and state governments slashed, public parks and outdoor playgrounds have deteriorated and been abandoned. Children's opportunities to interact in a naturalized outdoor setting is greatly diminished today.

Childhood and outdoor play are no longer synonymous. Today, many children live what one play authority has referred to as a childhood of imprisonment.[5] Child care facility playgrounds are often the only outdoor activities that many young children experience anymore.

Our company first became interested in the possibilities that outdoor play offers children's development when we conducted extensive focus group research with children and parents for a children's center we were designing. We were fascinated when the research consistently showed that children had a strong preference to play outdoors in natural landscapes, and that parents generally supported this kind of play. We continued to pursue the subject with an exhaustive review of the extensive research on environmental psychology and children's play and development. The research underscored our focus group findings and identified many types of children's play habitats and patterns that are difficult, if not impossible, to achieve in the built outdoor environment.

Biophilia: The Love of Outdoors

Two new disciplines, eco-psychology[6] and evolutionary psychology, are now suggesting that humans are genetically programmed by evolution with an affinity for the outdoors with vegetation and nature. Evolutionary psychologists use the term *biophilia*[7] to refer to this innate, hereditary emotional attraction of humans to nature and other living organisms. Biophilia is the biologically based human need to affiliate with nature and the genetic basis for human's positive responses to nature.[8] Why? Researchers say that for more than 99 percent of human history, people lived in hunter-gatherer bands totally and intimately involved in nature. So in relative terms, agriculture has existed for only a moment and urban societies for scarcely more than a blink of time.[9] Our original nature-based evolutionary genetic coding and instincts are still an essential part of us and continue to shape our behavior and responses to nature.[10]

However, if this natural attraction is not given opportunities to be exercised and flourish during the early years of life, the opposite, *biophobia*, an aversion to nature, may

develop. Biophobia ranges from discomfort in natural places to active scorn for whatever is not man-made, managed or air conditioned. Biophobia is also manifest in the tendency to regard nature as nothing more than a disposable resource.[11]

Well over 100 studies of outdoor experiences in the wilderness and nature areas show that natural outdoor environments produces positive physiological and psychological responses in humans, including reduced stress and a general feeling of well-being.[12,13] It is also a clear-cut finding that people, and especially young children who have not yet adapted to the man-made world, consistently prefer the natural landscape to built environments. Children's instinctive feelings of continuity with nature are demonstrated by the attraction children have for fairy tales set in nature and populated with animal characters.[14] Additional anecdotal evidence is that more children and adults visit zoos and aquariums than attend all major professional sports combined.[15]

The Importance of Nature to Children

Studies also have provided convincing evidence that the way people feel in pleasing natural environments improves recall of information, creative problem solving, and creativity.[16] Research shows that children who have behavioral or learning difficulties often perform much better in an outdoor natural setting. Early experiences with the natural world have been positively linked with the development of imagination and the sense of wonder.[17] Wonder is important as it a motivator for life long learning.[18] There is also strong evidence that young children respond more positively to experiences in the outdoors than adults as they have not yet adapted to unnatural, man-made, indoor environments.

The natural world is essential to the emotional health of children.[19] Just as children need positive adult contact and a sense of connection to the wider human community, they also need positive contact with nature and the chance for solitude and the sense of wonder that nature offers.[20] When children play in nature they are more likely to have positive feelings about each other and their surroundings.[21]

Outdoor environments are also important to children's development of independence and autonomy. Outdoor space allows children to gradually experiment with increasing distance from their caretaker. While the development of greater independence from toddler hood to middle childhood can happen within the confines of indoor spaces, safe space outdoors greatly adds to the ability of children to naturally experiment with independence and separation, and the adult's willingness to trust the child's competence which is essential for separation to happen. This is particularly important for children who live in small and crowded homes.[22]

Children's outdoor play is different from time spent indoors. The sensory experiences are different, and different standards of play apply. Activities which may be frowned on indoors can be safely tolerated outdoors. Children have greater freedom not only to run and shout, but also to interact with and manipulate the environment. Children are free to do 'messy' activities outdoors that won't be tolerated indoors by teachers.

Outdoor environments with natural things have three qualities that are unique and appealing to children as play environments—their unending diversity; the fact that they are not created by people; and their feeling of timelessness—the landscapes, trees, rivers described in fairy tales and myths still exist today.[23]

Children experience the natural environment differently than adults. Adults typically see nature as background for what they are doing.

Children experience nature, not as background for events, but rather as a stimulator and experiential component of their activities.[24] The world of nature is not a scene or even a landscape. Nature for the child is sheer sensory experience.[25] Children judge the natural setting not by its aesthetics, but rather by how they can interact with the environment.

Children have a unique, direct and experiential *way of knowing* the natural world as a place of beauty, mystery and wonder. Children's special affinity for the natural environment is connected to the child's development and his or her way of knowing.[26]

Plants, together with soil, sand, and water, provide settings that can be manipulated. You can build a trench in the sand and dirt or a rock dam over a stream, but there's not much you can do to a jungle gym except climb, hang, or fall off. Natural elements provide for open-ended play that emphasis unstructured creative exploration with diverse materials. The high levels of complexity and variety nature offers invites longer and more complex play Because of their interactive properties, plants stimulate discovery, dramatic pretend play, and imagination. Plants speak to all of the senses, so it's not surprising that children are closely attuned to environments with vegetation. Plants, in a pleasant environment with a mix of sun, shade, color, texture, fragrance, and softness of enclosure also encourage a sense of peacefulness.[27] Natural settings offer qualities of openness, diversity, manipulation, exploration, anonymity and wildness.[28] Children encounter a richer range of experience and learning beyond the gross motor opportunities of manufactured equipment.

All the manufactured equipment and all the indoor instructional materials produced by the best educators in the world cannot substitute for the primary experience of hands-on engagement with natural settings. They cannot replace the sensory moment where a child's attention is captured by the phenomena and materials of nature: The dappled sparkle of sunlight through leaves, the sound and motion of plants in the wind, the sight of butterflies or a colony of ants, the imaginative worlds of a square yard of dirt or sand, the endless sensory experience of water, the infinite space in an iris flower.[29]

Designing Outdoor Spaces for Children

The objective of designing children's outdoor environments is to use the landscape and vegetation as the play setting and nature as much as possible as the play materials.[30] The natural environment needs to read as a children's place; as a world separate from adults that responds to a child's own sense of place and time.

Our company calls well designed outdoor children's play spaces *discovery play gardens* to differential them from the current design paradigm for children's playgrounds. Some authorities call them *naturalized outdoor classrooms or naturalized playgrounds.*

There is a sense of wildness about an adventure play garden. Conventional play design focuses on manufactured and tightly designed play equipment. Conversely in a discovery play garden, although there may be some conventional play equipment, many of the spaces are informal and naturalistic so they will stimulate high quality free play and discovery learning.

Children's idea of beauty is wild rather than ordered.[31] A discovery play garden that plans for wildness, and provides openness, diversity, and opportunities for manipulation, exploration and experimentation, allows children to become totally immersed in play.[32] Children's discovery play gardens are very different than landscaped areas designed for adults, who prefer manicured lawns and tidy, neat, orderly uncluttered landscapes. Adventure play gardens are much looser in design because children value unmanicured places and the

adventure and mystery of hiding places and wild, spacious, uneven areas broken by clusters of plants.[33]

Physical attractiveness and innovativeness are not what is important for high quality outdoor play space design. Children need tools, open space, challenge and opportunities to control and manipulate the environment. Suransky calls this "history making power"[34]—the power for the child to imprint themselves upon the landscape, endow the landscape with significance and experience their own actions as transforming the environment.[35] Discovery play gardens are designed to stimulate children's senses and to nurture the child's curiosity, allow for interaction with other children, with adults and with the resources in the play space.

Outdoor play requires a lot of gear to make a go of it. Loose parts, sand, water, manipulatives, props and naturally found objects are essential tools for children's play. Loose parts have infinite play possibilities, and their total lack of structure and script allows children to make of them whatever their imaginations desire. Simon Nicholson first offered the theory of loose parts in children's play when he wrote in 1971, "In any environment, both the degree of inventiveness and creativity and the possibilities of discovery are directly proportional to the number and kind of variables in it."[36]

Through children's handling, manipulation and physical interaction with materials and the natural environment, they learn the rules and principles that make the world operate.

Outdoor play areas should flow from one area to the next, be as open-ended and simple as possible, encourage children to use their imaginations, have continuity and be perceived by the children as children's, not adults', spaces.

It is also desirable to integrate the outdoor areas with the indoor classroom with one sense of place and identity, so the transition between the two will be almost seamless. Design that allows children to go freely back and forth between inside and outside encourages children to experiment with autonomy from adults, both physically and symbolically.[37] It also allows the outdoor space to part of the classroom, rather than just a retreat from it.

Things children like in their outdoor environments include:

- water
- vegetation, including trees, bushes, flowers and long grasses,
- animals, creatures in ponds, and other living things
- sand, best if it can be mixed with water
- natural color, diversity and change
- places and features to sit in, on, under, lean against, and provide shelter and shade
- different levels and nooks and crannies, places that offer privacy and views
- structures, equipment and materials that can be changed, actually or in their imaginations, including plentiful loose parts.

The structures and equipment do not all need to be manufactured. As much as possible, many should be made of natural materials such as logs, stumps and boulders and use the landscape in natural ways with berms and mounds.

Outdoor areas lend themselves to meeting children's individual needs. Play areas and events can be designed as accessible to children with special needs without accessibility features being obvious. This is known as universal design.

Plants are vital. In fact, the identity of many of the play areas can be created through ecological theming with vegetation. For example, a sand play area can become a prehistoric dinosaur dig, surrounded by plants

that replicate a prehistoric setting. Or interactive water play can be set in a bog or stream habitat. It is also important to incorporate ecological areas that utilize indigenous vegetation and settings so children can experience, learn about and develop an appreciation of their local environment.

Naturalized outdoor play spaces are rich learning environments for all age children. They contain a hidden curriculum that speaks to children through their special way of knowing nature. Every learning center and activity that can be created in the indoor classroom can be created in the outdoors. Specialized areas can even be designed to meet the developmental needs of infants and toddlers. And these areas do not have to be large. Our company recently designed a 670 square foot infant discovery play garden for a child care facility.

Cost

Discovery play gardens do not necessarily cost more to build than conventional playgrounds. Rather than spend most of the budget on conventional manufactured playground equipment, moneys are shifted to landscaping and creating play areas using natural materials. Discovery play gardens do, however, require specialized design skills to create a holistic and integrated child's world. To accomplish this, a much higher percentage of the budget needs to be allocated for professional design services than with a dominantly equipment-based playground.

Selecting a Designer

Designers of discovery play gardens need a broad knowledge base and experience in multiple disciplines including child growth and development, construction and materials, universal design, budget management, landscaping for children, play facilitation, safety, play and early childhood education. They must have the ability to fully understand how children perceive and use the environment. General architects generally lack the specialized expertise discovery play gardens require. Equipment manufacturers usually are not trained to design an outdoor play space, and there may be an inherent conflict between their desire to maximize their company's equipment sale and what is in the best interest of children.

Understanding design considerations makes the environment comfortable and friendly to children and encourages complex play. Good design makes a huge difference in the quality of both the child's and the caretaker's experience. The design can either support teachers' and children's needs or be a permanent barrier to meeting those needs. A well designed discovery play garden will require very little, if any, adaptation on the teacher's or child's part.

Participatory Design

Participatory design—having children, teachers, parents and maintenance staff participate in the design process—is essential to the success of any discovery play garden. Children's input assures that they will feel it is a special place for them. Teachers input is needed so they will take ownership of the discovery play garden as an outdoor classroom and utilize it to support their curriculum goals. Parents need to be involved so they will be supportive of the concept and learn how the naturalized space and often *messy* play greatly supports their children's development and. Unlike conventional playgrounds, discovery play gardens require regular care and cleaning, just like an indoor classroom. Maintenance staff need to participate to assure that they will support the space and provide the maintenance required. User participation in the design process also helps to assure that the design will be culturally respectful.

Discovery play gardens offer children chances to manipulate the environment and explore, to wonder and experiment, to pretend, to under-

stand themselves, and to interact with nature, animals and interesting insects and with other children. They are environments that encourage children's rich and complex play and greatly expand the learning opportunities of just conventional playgrounds. Children's adventure play gardens are places where children can reclaim the magic that is their birthright—the ability to learn in a natural environment through exploration, discovery and the power of their own imaginations.

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